

THE AMES

Astragram



NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

AMES RESEARCH CENTER, MOFFETT FIELD

December 20, 1999

on-line at: <http://ccf.arc.nasa.gov/dx/>

Wishing a "bug-free" holiday to all...!



"I want to take this opportunity to let you know how proud I am of the NASA family. Thanks to all of you, we've had an incredible string of successes this year. The list of accomplishments is impressive: Deep Space One, SWAS, Stardust, LandSat 7, Quikscat, FUSE, the first space station assembly mission, and Chandra, just to name a few.

The American people are behind you. They know how difficult, and how important, it is to explore. They know that risk, failure and setbacks are part of that journey.

NASA is the boldest, most open agency in the Federal Government. The whole world watches what we do. We've wowed them before, and we will do it again."

— Excerpts from NASA Administrator Daniel S. Goldin's Message to Employees

Communication for the information technology age

Antarctica's frozen slice of life offers clues to life elsewhere in space

Scientists have discovered a microbial world hidden deep beneath the frozen Antarctic ice that could help them learn more about how life can survive under extreme conditions on other planets or moons.

Their findings are featured in a research paper co-authored by Dr. Chris McKay, a planetary scientist at Ames, that will be published in the Dec. 10 issue of *Science* magazine. Co-authored by a multi-disciplinary science team, the research paper entitled "Geomicrobiology of Subglacial Ice Above Lake Vostok, Antarctica," analyzes the ice above the huge freshwater lake buried deep below the East Antarctic ice sheet.

"Microbes within the liquid water habitat of Lake Vostok may shed light on the viability of life in similar harsh environments beyond Earth, such as in the frozen ocean subsurface on Jupiter's moon, Europa," McKay said. Galileo spacecraft results imply that a subsurface ocean could exist on Europa.

The research team tested samples from the ice 3,590 meters below Vostok Station, and found diverse colonies of microbes. Scientists say this is significant because the lake has been isolated from the usual sources of atmospheric-derived energy, such as photosynthesis, for millions of years.

"How the bacteria get energy (to survive) is an important question," McKay said. "The lake could be an analog to sub-ice Europa or subsurface Mars where conditions are similar."

Scientists believe ice is a good environment for primitive bacteria. The bacteria need less food because it is cold, and their metabolism slows down, somewhat like a hibernating bear's. Another finding was that DNA extracted from the microbes present in the team's Lake Vostok sample indicated the presence of only a few subgroups of known bacteria, coupled with low overall microbial diversity.

"It's what you'd expect, not teeming with rich life," McKay said. A team of scientists led by Dr. David Karl of the University of Hawaii found signs of bacterial life in the ice core. They also detected metabolic activity in some of the bacteria by measuring the bacteria's respiration rates during incubation.

Scientists said the sampled Vostok glacier ice also suggested that the lake water derived from a mixture of melted ice from both glacial and interglacial periods, deposited there approximately one million years

ago.

Although the thickness of the ice on Europa is not known, scientists think that tidal forces could form cracks extending to the surface. Under the thin ice, conditions may be similar to the conditions at Lake Vostok.

"If a similar ice layer is present under the surface of Europa's icy oceans, it may also harbor life," said McKay.

The research team included the paper's lead author, Dr. John Priscu, and others from the departments of biology, Earth science and physics at Montana State University, Bozeman, MT. Other researchers were from the department of Geology, the University of Alabama, Tuscaloosa, AL and the U. S. Geological Survey, Reston, VA.

BY KATHLEEN BURTON



Ames' nanotechnology to be used for cancer research

NASA Ames Integrated Product Team (IPT) on Devices and Nanotechnology has been awarded a \$1.5 million contract by the National Institute of Health (NIH), through the National Cancer Institute, to study how nanotechnology can be used in the detection of cancer cells.

The 40-member IPT's research is focused on nanotechnology, biosensors, quantum devices and computing, computational chemistry in materials processing, process modeling and diagnostics. Nanotechnology is the creation of functional materials, devices and systems through control of matter on the nanometer length scale (1-100 nanometers) and exploitation of novel phenomena and properties (physical, chemical and biological) at that length scale. For comparison, 10 nanometers are 1,000 times smaller than the diameter of human hair.

As an outgrowth of this research, the IPT has recently launched a new program to develop biosensors and biochips for astrobiology applications. These technologies will be used in future missions to Mars and Europa, as well as future astrobiology missions.

"NASA has a history of developing technologies in electronics, sensors, and systems for its missions which also find applications in the commercial sector and which meet mission needs of other agencies,"

Errata

In a front page story in the Dec. 6 edition, the name of NASA's Chief Financial Officer Arnold Holz was spelled incorrectly.

The images on pg. 10 of the same issue were mistakenly attributed to Lynda Watkins rather than Lynda Denevan.

Three Ames employee names were inadvertently omitted from the story on pg. 4 about the AIAA fellowships. They were Gano Broto Chatterji, William C. Horne and William E. Larsen.

We apologize for these errors.

said Meyya Meyyappan, IPT project manager. "After discussions with National Cancer Institute personnel, it became clear to us that our technology would apply well to cancer detection and diagnostics."

"We propose to develop novel carbon nanotube-based biosensor technology and develop a prototype biosensor catheter that permits detection of specific oligonucleotide sequences that serve as molecular signatures of cancer cells," explained Jie Han, the technical lead for the project. Hans said the biosensors will be tested "in vitro" using tissue samples from patients with chronic myelogenous leukemia and acute promyelocytic leukemia.

"The concept is a high-risk, high pay-off approach, completely novel to the mainstream NIH community, and represents a potential breakthrough in sensor technology," Meyyappan said.

During a recent visit to Ames by National Cancer Institute representatives, Dr. Carol Dahl, the Institute's project officer, explained that the grant was part of a \$12 million, three-year investment by the institute to support unconventional innovation for cancer research. "The commitment is real," Dahl said. "We want the products to be developed and available, and we will be here to facilitate the success of this program."

BY MICHAEL MEWHINNEY



Ames Happenings

Huge airship arrives at Moffett Field for maintenance

On December 8, news media were invited to tour, film and photograph a Skyship 600B, the first airship to visit his-

toric Moffett Field for an extended period since 1947. The pilot's instrument panel features high-tech navigational and communications

Sunnyvale Naval Air Station, as it was then known. The 785-foot long USS Macon was based at Moffett Field in historic Hangar 1 and provided long-range reconnaissance for the Pacific Fleet. In 1942, two more hangars, Hangars 2 and 3, were built at Moffett Field to accommodate the need for blimp storage, maintenance and training. In January 1944, the last airship arrived at the former Sunnyvale Naval Air Station at Moffett Field for assembly and in 1947, the last blimp was flown at Moffett Field.

BY MICHAEL MEWHINNEY



photo courtesy of Airship Operations, Inc.

Owned and operated by Airship Operations, Inc., of Orlando, FL, and leased by Tommy Hilfiger USA, the airship will be housed in Hangar 2 at Moffett Field through Dec. 20 to undergo routine maintenance.

The project includes washing its massive 200-foot-long, 67-foot-high envelope, and changing some of its 8,200 lights. The airship's shape is maintained entirely by the

equipment, including radar and a Global Positioning System (GPS). A 21-member ground crew, including four pilots, travels with the airship.

Although the Skyship 600B is the largest certified airship in operation today, stretching two-thirds the length of a football field and as tall as a 747 jumbo jet, it is a fraction of the size of the airships which flew 50 years ago. The giant dirigibles, USS Macon and USS Akron, both visited the

Ames carolers sing their hearts out!



photo by Andrew Doser

Entertaining the troops in the bldg. 204 lobby are, left to right: David Fencl (group director), Astrid Terlep, Suzanne Meyer, Dinah Showman, Janet Smith, Shelley Scarich, Marion Hansen, Garth Hull, Tom Clausen, Bill Likens. Not present: Bev Akins, Shirley Pepke, Diane Lattanzio, Joe Calabrese, Andrew Bachmann.

CFC appreciation ceremony held

On Nov. 20, Ames hosted a Combined Federal Campaign (CFC) award and appreciation ceremony in the Center's main auditorium.

In 1999, Ames employees continued the tradition of being a model of gener-



photo by Domonic Hart

osity for other agencies. Center employees supported the CFC drive with pledges totaling over \$212,000. That total comprised about 25% of Santa Clara County's entire amount pledged by federal sources, even though Ames employees account for only 10% of the federal workforce in the county.

Ames was awarded the Santa Clara and San Benito County silver award for our efforts. During the event, Ames Center Director Henry McDonald recognized the donors and key workers who contributed so much to make this year's campaign the huge success that it was. In addition, the Center honored Rachel King, an inspiring volunteer from "Doctors Without Borders," the organization that won this year's Nobel peace prize for using charitable donations to save lives and cure the sick.

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Center Briefs

NASA provides 21st-century solutions to 1999 drought

As many drought-stricken farms in America limp through the last harvest of the 20th century, researchers are using remote sensing technology developed for the space program to help improve crop management and increase profitability.

The availability of inexpensive agricultural products for consumers in the next century could depend on such capabilities --potentially meaning the difference between "boom" and "bust" for American farmers in the new millennium.

At the Global Hydrology and Climate Center at NASA's Marshall Space Flight Center, Huntsville, AL, NASA scientists are collaborating with university researchers to apply remote-sensing technology to a sophisticated agricultural technique called precision farming.

Gamma-ray bursts light the way to the early universe

NASA astronomers say they have uncovered a specific property of gamma-ray bursts that will enable them to gauge the distances to thousands of these powerful explosions, many perhaps beyond the reach of existing telescopes.

This finding, experts say, may allow scientists to determine the geometry of the universe throughout its various epochs, as well as when and where massive stars formed in the very early universe. A team led by Dr. Jay Norris, an astrophysicist at NASA's Goddard Space Flight Center in Greenbelt, MD, performed the new analysis using data from NASA's Compton Gamma Ray Observatory and several optical telescopes.

Spacecraft provides first direct evidence that smoke in the atmosphere inhibits rainfall

For the first time, researchers have proven that smoke from forest fires inhibits rainfall. The findings, published recently in an issue of "Geophysical Research Letters," are based on an extensive analysis of data taken from NASA's Tropical Rainfall Measuring Mission (TRMM) spacecraft.

The study shows that the "warm rain" processes that often create rain in tropical clouds are practically shut off when the clouds are polluted with heavy smoke from forest fires. In these clouds, scientists found that the cloud tops must grow considerably above the freezing level (16,000 feet) in order for them to start producing rain by an alternative mechanism.

1999 Director's Discretionary Fund Poster session held



photo by Tom Trower

The 1999 Director's Discretionary Fund (DDF) poster session was held in the Moffett Field Training Center on November 30. Approximately 40 posters were presented describing the wide range of innovative high-risk research performed at the Center. In the foreground is the "Phantom DS2" TROV, a teleoperated robotic underwater vehicle that is being used by Carol Stoker and collaborators to explore the hydrothermal vent in Antarctica, underwater environments relevant to Astrobiology.

Pioneer 10 postage stamp issued

On November 18, the US Postal Service issued a stamp commemorating the Pioneer 10 spacecraft. It was selected as one of the 15 icons for the decade of the 1970s as part of its "Celebrate the Century" postage stamp series.

The US Postal Service consulted with the Pioneer Project Manager at Ames to ensure its accuracy. The following inscription was chosen for the stamp: Launched March 1972, "Pioneer 10" was the first spacecraft to travel to an outer planet, providing data and images of Jupiter. Eleven years later, it became the first man-made object to leave the solar system.



Ames Happenings



photo by Dominic Hart

Ames Deputy Center Director Bill Berry (left) chats with Bob Norwood (right) from NASA Headquarters following the recent Space Act awards ceremony.

Space Act Awards presented

A Space Act Award ceremony took place on November 18 in the Ames Café. Bill Berry, Deputy Center Director, and Carolina Blake, Chief of the Commercial Technology Office, presented the award certificates. They included awards for the 1999 Software of the Year Award winner (Remote Agent) and runner-up (The Virtual Interactive Imaging and Cybersurgery for Distant Health Care). Dr. Robert Norwood, Director of Commercial Programs at NASA Headquarters, presented the keynote address during the ceremony.

Hoffman discusses project team study

Dr. Edward Hoffman, Director of NASA's Academy of Program and Project Leadership, discussed the findings from NASA's Project Team Study with Ames program and project managers during his Dec. 7 visit to Ames.

Dr. Hoffman's visit was hosted by the Ames Program and Project Management Development Program.



photo by Tom Trower

Holiday safety tips from Protective Services

With the holidays upon us, now is a good time to remind everyone about crime prevention and driver's safety.

- Always be aware of your surroundings, especially if you are shopping alone. If you feel uncomfortable or believe you are being followed, ask a store employee or store security to escort you to your car. Many malls provide free escorts.

- If you are in a situation that makes you feel uncomfortable, leave. Don't worry about hurting someone's feelings, your safety is your only concern. It is always a good idea to make sure all of your deadbolts and other locks are in good working order. If you don't have one, have a one-way door viewer installed.

- If you leave for any trips, use randomly programmed light timers. Also put a timer on a radio or TV. You want to make it look like someone is home. Arrange with a neighbor to pick up your papers and mail, or contact the paper to have delivery stopped while you are away and have the post office do the same. Burglars will usually avoid a house they believe is occupied.

- If you attend any celebrations, do not drink and drive. Have a designated driver or call a taxi. You risk your health as well as your freedom if you drink and drive.

- Always wear your seatbelts. Not only are you safer, it's the LAW!

- When driving during inclement weather, SLOW DOWN! Give yourself at

least 4 seconds between you and the car in front of you. Make this reactionary gap longer with wet or icy road conditions.

- In the mountains, be aware of black ice conditions. If you have an all-wheel or 4-wheel drive vehicle, read the operator's manual to learn the proper way of driving your vehicle. Even on sunny days, black ice can be on the roadway in shady areas.

For further information on crime prevention tips or driver's safety, please go to the Protective Services Office website at http://ccf.arc.nasa.gov/codejp/Jp_home.html.

By LT. MARK TARTE
PROTECTIVE SERVICES OFFICE



Are You Y2K Ready?

Ames community Y2K preparedness briefing held

On November 22, the Y2K Project Office hosted a Y2K Preparedness briefing to inform employees about the Center's Y2K status and its preparedness plans for the New Year's rollover weekend. In addition, guest speakers from Pacific Bell, Santa Clara County, P.G.&E., El Camino Hospital, Golden Bay Federal Credit Union, and the Red Cross were invited to share their readiness status and plans.

Ray O'Brien, ARC's Y2K Project Manager, summarized the Center's Y2K readiness status and stated that all critical Ames systems have been certified as Year 2000 compliant. "We appreciate all the hard work that was put forth by Ames employees in preparing the Center for this event over the past two years," stated O'Brien. The Center's plan for coverage over the New Year's weekend was also outlined and is based on having a limited number of additional personnel on-site to monitor critical systems,

Center's plan for coverage during the Year 2000 transition can be viewed at <http://george.arc.nasa.gov/year2000>.

Randy Okamura, from Pacific Bell, stated that his company is "Y2K Ready." He ad-



vised everyone to use the phone wisely over the New Year's weekend. "Pacific Bell expects a very large volume of calls on New Year's Day, as customers call friends and family to celebrate the New Year. As a result, some customers may temporarily experience a fast busy signal, slow dial tone, or a "try again message" after dialing," stated Okamura. "If you experience these situations, just realize it is only temporary and that you should be able to place your call shortly." In addition to having extra personnel monitoring its systems, Pacific Bell will have back-up generators at their telephone equipment offices that will automatically switch on to provide uninterrupted service to customers in the case of a commercial power outage.

P.G.&E.'s Y2K Manager,

Rich McCamish, stated that his company has been taking very strong measures to avoid Y2K-related service disruptions and that he does not expect problems. According to McCamish, being prepared for the possibility of outages caused by winter storms, other natural disasters, and technical glitches is a normal part of business for P.G.&E. His company will be well prepared to deal with whatever problems may occur. Similarly, industry groups such as the North American Electric Reliability Council (NERC), Electric Power Research Institute (EPRI), California Public Utilities Commission (CPUC), and the American Gas Association, are confident that utilities will be prepared to handle any system hiccups that may arise. PG&E contingency plans for the weekend transi-



tion into the Year 2000 include extra staffing at power plants, gas facilities, and call centers.

Santa Clara County's Y2K efforts included assessment and repair of systems in critical areas such as: hospital and health services, law enforcement (jails, juvenile halls, and shelters), emergency services, fire, hazardous waste response, ambulance services, food shelters, human services (food bank, Meals-on-Wheels), coroner's office, and critical financial services. Susan Fitts, Public Communications and Community Outreach, was confident the County is well prepared for Y2K, but made a point of reminding employees that it's their responsibility to prepare their home and family for emergencies that could happen at any time.

Patrick Burns, CEO of Golden Bay Federal Credit Union, was very positive about his organization's readiness status. However, Burns warned everyone about a potential increase in home burglaries due to large amounts of extra cash being kept in homes because of people's concerns about problems with banking and financial systems. He stated that he expects no problems at Golden Bay due to the Year 2000 transition, and that he believes keeping large amounts of money in bank accounts is a lot safer than pulling it out.

While all speakers communicated a positive message about the Y2K status of their organizations, personal emergency preparedness at home was also a common theme. Their advice to Ames employees was to be as prepared as you would for a major earthquake or any other disaster. Several tips were mentioned, including having enough stored water and non-perishable food on hand, being equipped with flashlights and batteries, having a battery-powered radio, and maintaining a first aid kit. All speakers agreed that, regardless of various opinion's concerning what will happen during the Year 2000 transition, preparing one's family for any emergency that

continued on back page



photo by Tom Trower

Speakers from local utility companies and service organizations presented their Y2K readiness plans.

respond to any problems, and report status to NASA Headquarters. Other Center personnel will be on call just in case an escalated response is necessary. Most civil service and contractor personnel who will be on-site or on-call during the rollover weekend have already been notified. The majority of additional weekend staffing will consist of personnel from the Applied Information Technology Division (JT), Facilities Management Division (JF), and the Protective Services Division (JP). The Center's Emergency Operations Center will also be minimally staffed to serve as the focal point for all "zero day" operations. O'Brien added, "The Year 2000 is almost here, and I am confident that Ames will do well during the transition." A high-level overview of the

Calendar

Ames Bowling League in Palo Alto Bowl every Tuesday at 6 p.m. Season ends April 25 with a banquet the week after. The league is in need of bowlers to join teams, as well as substitutes. POC: Mina Cappuccio, mcappuccio@mail.arc.nasa.gov, at ext. 4-1313 or Mike Liu, mliu@mail.arc.nasa.gov, at ext. 4-4357.

Ames Ballroom Dance Club. Tuesdays: Cha Cha 11/9, Bolero 11/16, 11/23, 11/30. No classes during the month of December. 3 levels of classes, from Beg. to Int., 5:15 - 6:45pm. Moffett Training and Conference Center, Bldg. 3/Showroom. Women dancers are especially encouraged to join. Holiday party will be 12/4, watch for upcoming details! POC: Helen Hwang, hwang@dm1.arc.nasa.gov.

Model HO/HO3 Railroad Train Club at Moffett Field invites train buffs to visit & join the club in Bldg. 126, across from the south end of Hangar One. The club is in particular need of low voltage electricians & scenery builders and maintainers. Work nights are usually on Friday nights from 7:30 p.m. to 9:30 p.m. Play time is Sunday from 2 p.m. to 4 p.m. For more info, call John Donovan at (408) 735-4954 (W) or (408) 281-2899 (H).

Jetstream Toastmasters, Mondays, 12 noon to 1 p.m., N-269/Rm. 179. Guests welcome. POC: Samson Cheung 4-2875 or Lich Tran 4-5997.

Ames Child Care Center Board of Directors Meeting, Wednesdays, 12 noon to 1 p.m., N-213/Rm. 204. POC: Debbie Wood at ext. 4-0256.

Native American Advisory Committee Mtg, Dec 28, 12 noon to 1 p.m., Ames Café. POC: Mike Liu at ext. 4-1132.

Ames Contractor Council Meeting, Jan 5, 11 a.m., N-200 Comm. Rm. POC: Jack Stanley at ext. 4-2345.

Environmental, Health and Safety Monthly Information Forum, Jan 6, 8:30 a.m. to 9:30 a.m., Bldg. 19/ Rm 1078. POC: Linda Vrabel at ext. 4-0924.

Hispanic Advisory Committee for Employees, Jan 6, 11:45 a.m. to 12:30 p.m., N-241/Rm 237. POC: Mary R. Valdez, at ext. 4-5819.

Ames African American Advisory Group Meeting, Jan 6, 11:30 a.m. to 12:30 p.m. POC: Robert Finnie at ext. 4-5230. Contact Robert for meeting place.

Nat'l Association of Retired Federal Employees, San Jose Chapter #50, Meeting, Jan 7, at the Elk's Club, 44 W. Alma Avenue, San Jose. Social hour: 10:30 a.m. Prog. & bus. mtg. follow lunch at 11:30 a.m. POCs: Mr. Rod Peery, Pres., (650) 967-9418 or NARFE 1-800-627-3394.

Ames Sailing Club Meeting, Jan 13, 11:30 a.m. to 1 p.m., N-262/Rm. 100. POC: Stan Phillips, ext. 4-3530.

Professional Administrative Council (PAC) Meeting, Jan 13, 10:30 a.m. to 11:30 a.m. Location TBD. POC: Janette Rocha, ext. 4-3371.

NFFE Local 997 Union General Meeting, Jan 19, noon to 1 p.m., Bldg. 19/Rm. 2017. Guests welcome. POC: Marianne Mosher at ext. 4-4055.

Ames Amateur Radio Club, Jan 20, 12 noon, N-260/ Conf. Rm. POC: Mike Herrick, K6EAA at ext. 4-5477.

Ames Asian American Pacific Islander Advisory Group Meeting, Jan 20, 11:30 a.m. to 1 p.m., N-241/Rm. B2. POC: Daryl Wong, ext. 4-6889 or Brett Vu, ext. 4-0911.

Ames Classifieds

Ads for the next issue should be sent to astrogram@mail.arc.nasa.gov by the Monday following publication of the present issue and must be resubmitted for each issue. Ads must involve personal needs or items; (no commercial/third-party ads) and will run on space-available basis only. First-time ads are given priority. Ads must include home phone numbers; Ames extensions and email addresses will be accepted for carpool and lost & found ads only. Due to the volume of material received, we are unable to verify the accuracy of the statements made in the ads.

Housing

Room for rent in house in midtown Palo Alto. Kitchen, bathroom & pool privileges. Tenant must be orderly, N/S. \$600/mo. Dr. Jim Stevenson, ext. 45720.

Cozy, 3bd/1ba, 2car gar, T/H in Union city. \$1,300/mo. + dep. Call (661) 258-2906.

House or bedrooms for rent in Newark:3bd/2ba located near 880 and 84. Very close to four major groceries and schools from K to12 and NewPark Mall. Big master bd, family and living rooms, big yards with lots of fruit trees. \$1,500 or \$500/rm. Available in January. Jim (510) 794-7187.

Tired of commuting from SF?!? We have a 2 bd 2-1/2 bath townhouse 5 min from ARC and are looking for housing in SF for a home exchange through May. Cal (650) 964-0496.

For sale by owner, \$529K, small horse ranch for sale near Watsonville. Royal oaks, California/scenic rural area. 3 acres with trees and lots of open space. 3 bd/2 ba home/family room w/fireplace. Front/rear decks w/hot tub room. 2 car garage w/laundry room & storage room. Barn, tack room, corrals, workshop/electricity. Property fenced and outside lighting. For more info, call Ron (408) 736-2150. Lv msg/phn # or call (831) 722-0130.

Transportation

'92 Toyota Paseo, manual transmission, A/C, 103K mls, good condition, \$4,000. Cathy (510) 494-1923.

'95 Ford Windstar GL White - \$11,000. 70k miles, original owner, rear & roof A/C, power windows, luggage rack, after-market American Racing Wheels, new tires, excellent condition. Call (408) 226-7449.

Miscellaneous

Les Miserables dream cast in concert at Royal Albert Hall, VHS tape viewed once, \$10. Call (408) 295-2160.

GE Digital answering machine (requires no tapes), with manual. \$15. Call (408) 295-2160.

Computer system. 225 mhz (604e) PowerTower Pro, 2GB HD, internal zip, Mac OS 8.0 & misc. SW, 17" monitor, 56k external modem, Epson 600 color printer; \$1,250 or B/O. Moving out of state. Call (650) 941-2784 eves.

Moving sale. 26" RCA swivel console TV \$85; Maytag washer & dryer, \$45 ea.; GE Spacesaver microwave (w/mounting brackets), \$50; den/library system, versatile, 6 pieces, drk. cherry, \$675; desk/hutch, solid oak, \$100; 2 end tables Cost Plus Mexican style, \$25 ea.; China hutch (top only) \$20; patio table/4 chairs, \$100; hanging lamp (Coca Cola) \$15. Call (650) 941-2784.

Pool Table, with removable ping-pong top and accessories for both. Very nice condition. \$600 or best offer.

Antique refrigerator, GE late 1940's, work fine, all original inside items, \$60. Call (650) 941-2784.

55-gallon tru vu plexi aquarium \$125 incl. light, rocks and filter; oak exec size desk \$250; oak drafting table \$200; powerwheels jeep \$60; NEW Equinox water purification system (attaches to kitchen faucet) \$85. All prices firm. Lynda (408) 782-0932.

Looking for Rose Bowl tickets for the Stanford vs. Wisconsin Football January 1, 2000. Call (408) 274-1754.

Techline bookcase, 72" H x 36" W, ivory, like new. Was \$800, asking \$200; 2 living room chairs, pecan frame with brocade cushions + throw pillows. Orig \$300, asking \$75 each; teak rollout keyboard tray, \$15; framed prints and posters, \$15 - \$75. Judith (650) 323-1670.

Ski Racks: Barreccrafter model SR71 with locks. Fits cars with gutters. Like new. \$64 (\$110 new); Thule model 710 with locks. RequiSpeakers from local utility companies and service organizations presented their Y2K readiness plans.res fit kit for your car. Like new \$84 (\$135 new). Dave (408) 356-1175.

Vacation rental

Lake Tahoe-Squaw Valley townhse, 3bd/2ba, View of slopes, close to lifts. Wkend \$470, midwk \$175 night. Includes linens, firewood. Call (650) 968-4155 or email: DBMcKellar@aol.com

Lost & Found

Moffett Field Lost and Found may be reached via ext. 4-5416 at any time. Residents and employees at Ames may also use Internet Browser at: <http://ccf.arc.nasa.gov/codejp/pages/lostFound.html> to view a list of found property and obtain specific instructions for reporting lost or found property and how to recover found property. Call Moffett Field Security Police Investigations Section at ext. 4-1359 or email at: mfine@mail.arc.nasa.gov.

Ames Retirements

Name	Code	Date
Don Christianson	FM	12/31/99
Alvin Jeffress	FOW	12/31/99
Jim Laub	AIP	12/31/99
Everett Maynard	FOI	12/31/99

Ames radio info for employees

1700KHz AM radio--information radio annoucnments for NASA/Ames employees during emergencies.

Astrogram deadlines

All Ames employees are invited to submit articles relating to Ames projects and activities for publication in the *Astrogram*. When submitting stories or ads for publication, submit your material, along with any questions, in MS word by e-mail to: astrogram@mail.arc.nasa.gov on or before the deadline.

DEADLINE	PUBLICATION
TUES, JAN 11, 2000	MON, JAN 24
TUES, JAN 25	MON, FEB 7
TUES, FEB 8	MON, FEB 21
TUES, FEB 22	MON, MAR 6
TUES, MAR 7	MON, MAR 20
TUES, MAR 21	MON, APR 3
TUES, APR 4	MON, APR 17
TUES, APR 18	MON, MAY 1
TUES, MAY 2	MON, MAY 15

Events & Miscellaneous

Ames community Y2K preparedness briefing held

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may occur is always a smart decision.

"Y2K and You," a pamphlet prepared by the Federal Emergency Management Agency (FEMA) is being distributed center-wide. The Y2K Project Office recommends that employees take the time to review this pamphlet because it provides good common sense preparedness information and guidance. Additionally, flyers have been distributed to all employees with instructions for shutting down their computers prior to Friday, December 31, 1999, the New Year's holiday, and for starting them back up after returning to work on Monday, January 3, 2000. The flyer also provides ways to check on the status of the Center over the New Year's weekend. Other Y2K preparedness information can be found on the Center's Y2K website at: <http://george.arc.nasa.gov/year2000/>. In addition, PC BIOS testing software can be downloaded from this website and used to test your PC at work or at home. If you have any questions, contact the Y2K Project Office at 4-6875. There are only a few days left before January 1, 2000, so take the time to be well prepared so that you and your family will have a safe and enjoyable new millennium celebration!

BY CYNDI CARBON

Ames virtual airport tower to benefit air passengers

Airline passengers will soon benefit from NASA FutureFlight Central, the world's first full-scale virtual airport-control tower located at Ames. Opened for business on December 13, NASA FutureFlight Central is a world-class research facility dedicated to addressing the future needs of the nation's airports. It is designed to test - under realistic airport conditions and configurations - ways to solve potential air and ground traffic problems at commercial airports. The new facility will benefit airline passengers by providing safer air travel with fewer airport delays and greater cost efficiencies.

NASA FutureFlight Central uses supercomputers and twelve rear-projections video screens to provide a seamless, 360-degree high-resolution view of an airport from the control tower. The facility can be configured to provide realistic views of any airport in the world - either existing or under construction - under all weather and seasonal conditions. Real people interact during live-action simulations to test new technologies, fine-tune airport operations, and evaluate airport improvements under risk-free conditions.

Further information about the facility can be found at: <http://ffc.arc.nasa.gov>

BY LAURA LEWIS



photo by Tom Trower

Zoe Lofgren, Congresswoman for California's 16th District, with Deputy Center Director Bill Berry at the FFC dedication.

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